REMARKS

Claims 1-3 were originally presented for examination in the present application. The present Amendment adds new claims 4-8. Thus, upon entry of the present Amendment, claims 1-8 will remain pending. Applicants have made amendments of form to claims 1 and 3, and respectfully submit that the amendments do not affect the scope of those claims.

The specification of the present application has been objected to for an improper abstract. Applicants respectfully submit that the current amendments to the Abstract have sufficiently addressed this objection, and request that it be withdrawn.

Claims 1-3 have been rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent Application No. JP2004-168834A, to Chishima et al. ("Chishima")

An English translation of Japanese Patent Application No. 2004-64280, which is the priority document of the present application, is attached to this Amendment in Exhibit 1. Thus, under 37 C.F.R. §1.55(a)(4)(i)(B), Chishima has been overcome, since the priority document predates Chishima. A copy of the statement regarding the accuracy of the translation required under 37 C.F.R. §1.55(a)(4)(ii) is also attached in Exhibit 1. Applicants respectfully request that the rejection be withdrawn.

Claims 1 and 2 have been rejected under 35 U.S.C. §102(b) as being anticipated by the article entitled "Transparent silica gel-PMMA composites," Pope, E.J.A. et al., J. Mater. Res. Vol. 4, No. 4, Jul/Aug 1989. ("Pope") Applicants respectfully traverse. Claim 1 is independent.

Claim 1 recites a porous nano material polymer composite wherein polymer penetrates into nano pores of nano silica to form a network structure.

Pope is directed to transparent silica gel-polymer composites prepared by the impregnation of porous gels with organic monomer and polymerization in situ. As states

in the "Experimental" section on p. 1018, the porous silica gels are synthesized by the sol-gel method.

The porous silica gels obtained by the sol-gel method disclosed in Pope are different from the nano silica according to the present invention because they are not in the form of particles. As stated in the present specification, the nano silica of claim 1 is nano sized silica in the form of particles, such as Aerosil RX50, of which the average primary particle size is 40nm. (p. 11, ¶ 25)

Pope, by contrast, clearly states that "after mixing, solutions were allowed to gel and dry at 40 degree centigrade in 9mm diameter and 27 mm long polyethylene test tubes." (pp. 1018-1019, emphasis added). Thus, the porous silica gels according to Pope are not in the form of particles.

The Office Action states on p. 3 that Pope describes composites having a "phase dimension" on the order of 100 angstroms. However, it is unclear what exactly Pope means by "phase dimension," and the Office Action's assumption that it reads on the claimed nano silica is not supported in the reference. As noted by Pope, in fact, the average pore diameter of the silica gel is 156 angstroms, so perhaps the meaning of "phase dimension" should be interpreted as the pore diameter. Under any interpretation, however, Pope fails to disclose or suggest nano silica, as required by claim 1.

Given that, as discussed above, Pope fails to disclose or suggest nano silica, the Office Action's statement that the network structure of claim 1 is inherently disclosed in Pope is mistaken. There is no network structure in the gels of Pope, because Pope does not disclose or suggest nano silicas.

Therefore, claim 1 is patentable over Pope under 35 U.S.C. §102(b). Claim 2 depends from claim 1, and is therefore patentable over Pope for at least the reasons provided above. Applicants respectfully request that the rejection of claims 1 and 2 be

withdrawn.

Claim 3 has been rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Pope, and Zerda et al., Macromolecules 2003, 36, 1603-1608. ("Zerda") Claim 3 is independent. Applicants respectfully traverse.

Claim 3 recites a method of manufacturing porous nano material polymer composite, the method comprising, impregnating monomer in nanometer order holes of a porous nano material in supercritical carbon dioxide fluid, and polymerizing the monomer.

As previously discussed with respect to claim 1, Pope fails to disclose or suggest nano silicas, and thus fails to disclose or suggest the porous nano material of claim 3. Zerda fails to cure this deficiency of Pope, and is not relied on by the Office Action to do so. Zerda is merely relied on for its disclosure of supercritical carbon dioxide fluid.

Furthermore, the benefits of the method of the present disclosure that arise from the network structure, such as high clarity, high heat-resistance, and high hardness, are not considered by, or can not be predicted by Pope. Again, Zerda fails to cure this deficiency.

Therefore, claim 3 is patentable over the cited combination of Pope and Zerda under 35 U.S.C. §103(a). Applicant respectfully requests that the rejection be withdrawn.

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Such action is solicited.

Respectfully submitted,

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EXHIBIT 1